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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/565,667	ASHLEY, ALEXIS S.R.	
	<b>Examiner</b>	<b>Art Unit</b>	
	ROBERT HANCE	2421	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 23 June 2009.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-36 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-36 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____ .	6) <input type="checkbox"/> Other: _____ .

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/23/09 has been entered.

### ***Response to Arguments***

2. Applicant's arguments filed 6/23/09 have been fully considered but they are not persuasive.

Applicant argues on pages 15-17 of the Remarks (and repeats the argument on pages 21-22 and pages 26-27 with respect to claims 11 and 22) that the combination of Deguillaume, Penk and Yoshida fail to disclose the invention as currently amended. Examiner respectfully disagrees. Applicant states that the combination of references does not disclose "inserting content identification data ... in conjunction with each data frame for which a corresponding content identification data relates, at regular intervals within the media data stream ... wherein the content identification data includes a tamper resistant identifier that (i) is based upon a rapidly changing property extracted from a given data frame that is difficult to alter and (ii) is inserted ... in conjunction with

the corresponding given data frame by reference to the rapidly changing property from which property data was extracted ..." Examiner respectfully asserts that this is precisely what the combination of references discloses. Deguillaume discloses "inserting content identification data in conjunction with data frames (claim 13 – images are video frames) for which a corresponding content identification relates, wherein the content identification data includes a tamper resistant identifier that (i) is based upon a rapidly changing property extracted from a given data frame that is difficult to alter and (ii) is inserted ... in conjunction with the corresponding given data frame by reference to the rapidly changing property from which property data was extracted (paragraphs 33-35 and 40-42 – the watermarks (which are difficult to alter) are inserted into the data frames from which data is used to calculate the watermarks. The watermarks are calculated from the frame data itself and are used to authenticate the frame, therefore they are a form of content identification and are, by definition, tamper resistant).

Yoshida discloses that the identification is inserted into each frame (regular intervals) of video (see Abstract). Therefore, the combination of Deguillaume, Penk and Yoshida discloses the claims as currently amended.

Applicant argues on pages 17-18 (and repeats the argument on pages 22-23 and 27-28) that the combination of references is improper because the references themselves "do not provide any incentive or motivation supporting the desirability of the combination." In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the

claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the rationale for combining the references does not come from an express statement of desirability in their combination; rather, it comes from knowledge generally available to one of ordinary skill in the art. These rationales were stated in the rejections found in the previous Office Action, and are repeated below.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 1-3, 6-9, 31 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deguillaume et al., US Pub No 2003/0070075 in view of Penk et al., US Pub No 2003/0074670 and further in view of Yoshida, Japanese Pub No. JP 200165248.

**As to claim 1** Deguillaume discloses a method for providing content identification within media data for distribution from a media content data source device comprising:

inserting content identification data into frames of the media data stream to be distributed, in conjunction with each data frame for which corresponding content identification data relates, wherein the content identification data includes a tamper resistant identifier that is based upon a rapidly changing property extracted from a given data frame of the media data that is difficult to alter and is inserted into the media data stream in conjunction with the corresponding given data frame by reference to the rapidly changing property from which property data was extracted (Paragraphs 33-35 and 40-42; claims 12 and 13; Figs. 1 and 2 – watermarks are embedded in frames of video. The watermarks are dependent on the information in the frame of video, and therefore are a form of content identification – see for example the extraction and verification process described in Paragraphs 45-48. Due to the nature of video, these tamper resistant identifiers are based on rapidly changing properties of the media data. The watermarks are embedded in conjunction with the video frame from which the identification data is extracted. This watermark is (i) difficult to alter and (ii) inserted in conjunction with the corresponding given data frame by referring to the rapidly changing (image) property. See Paragraphs 40-42).

Deguillaume fails to disclose that the content identification is inserted within the media data stream; and receiving the data stream of media content at the media content data source device.

However, in an analogous art, Penk discloses a broadcaster which receives a data stream of media content (Paragraph 41; Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Deguillaume with the teachings of Penk. In the combined system of Deguillaume and Penk, the data stored at the broadcaster (Penk Fig. 2: 102) is a stored stream, therefore the content identification is inserted within a media data stream. The rationale for this modification would have been to enable the invention of Deguillaume to receive media content from a remote content provider.

The combined system of Deguillaume and Penk fail to disclose that the content identification is inserted at regular intervals within the media data stream; that the rapidly changing property of the media data stream includes a property which changes with each frame of the media data stream; and the content identification data further comprising a continuity count within the identifier, wherein the continuity count comprises a data field that increments in a predictable manner each time the identifier is inserted into the media data stream to enable a detection of unauthorized editing by detecting any discontinuity in an embedded continuity count.

However, in an analogous art, Yoshida discloses content identification inserted at regular intervals within the media data stream (Abs – watermarks are inserted at each frame);

that the rapidly changing property of the media data stream used to calculated a watermark includes a property which changes with each frame of the media data stream (Abs – watermarks are based on frame number, which changes with each frame); and content identification data inserted into frames of a media data stream that comprises a continuity count, wherein the continuity count comprises a data field that

increments in a predictable manner each time the identifier is inserted into the media data stream to enable a detection of unauthorized editing by detecting any discontinuity in an embedded continuity count (Abs – the watermark comprises frame number, or a continuity count, which increments with each frame. Watermarks are inserted at each frame, so the count is incremented each time the identifier is inserted into the stream).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system of Deguillaume and Penk with the teachings of Yoshida. The rationale for this modification would have been to provide further protection of copyright of contents against interception by providing an even more secure watermarking scheme.

**As to claim 2** the combined system of Deguillaume, Penk and Yoshida disclose the method of claim 1 wherein the content identification data is inserted every frame (Yoshida Abs).

**As to claim 3** the combined system of Deguillaume, Penk and Yoshida disclose the method of claim 1 wherein the content identification data is digitally combined with a predetermined property of the data stream (Deguillaume Paragraphs 40-42).

**As to claim 6** the combined system of Deguillaume, Penk and Yoshida disclose the method of claim 1 in which the media data stream may comprise any one or more of pictures and audio or video data streams (Penk Paragraph 40).

**As to claim 7** the combined system of Deguillaume, Penk and Yoshida disclose a method in which the predetermined property is any property of the media data stream that changes from data frame to data frame (Deguillaume Paragraph 40 – the hash

function takes as its input the data of local blocks of video (see claim 12-13), which by nature changes from frame to frame).

**As to claim 8** the combined system of Deguillaume, Penk and Yoshida disclose a method in which the predetermined property comprises any one or more of: frame size, frame hash, transport stream identifier, clock signal, and continuity count (Deguillaume Paragraphs 40-42).

**As to claim 9** the combined system of Deguillaume, Penk and Yoshida disclose a method in which the predetermined property is a combination of frame size and frame hash (Deguillaume Paragraphs 40-42).

**As to claims 31 and 36**, see similar rejection of claim 1. The method of claim 1 corresponds to the apparatus of claim 31 and the computer program products of claim 36. Therefore, claims 31 and 36 have been analyzed and rejected.

3. Claims 4-5 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system of Deguillaume, Penk and Yoshida disclose as applied to claims 1 and 31 above, and further in view of Miettinen et al., US Pub No 2002/0138729.

**As to claim 4** the combined system of Deguillaume, Penk and Yoshida disclose the method of claim 1 for providing tamper resistant content identification within the media data stream, in which the inserting content identification data further comprises: extracting data relating to a predetermined property of the media data stream (Deguillaume Paragraphs 40-42); combining the extracted data with content

identification data (Deguillaume Paragraphs 40-42 – unique image identification name or number, etc. is included in the input to the hash function); and inserting the combined data and a digital signature as secured content identification data into the data stream (Deguillaume Paragraphs 20 and 34).

The combined system of Deguillaume, Penk and Yoshida disclose fail to disclose applying a digital signature to the combined data.

However, Miettinen et al. disclose applying a digital signature to a hash code (Paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the digital signature disclosed by Miettinen et al. in the combined system of Deguillaume, Penk and Yoshida. The rationale for this combination would have been to ascertain whether the data being sent had been modified (see Miettinen et al. Paragraph 9).

**As to claim 5** the combined system of Deguillaume, Penk, Yoshida and Miettinen disclose the method of claim 4 in which the combining the extracted data with content identification data comprises forming a hash code from the extracted data and the content identification data (Deguillaume Paragraph 42).

**As to claim 32** see similar rejection of claim 4. The method of claim 4 corresponds to the apparatus of claim 32. Therefore claim 32 has been analyzed and rejected.

**As to claim 33** Deguillaume, Penk and Yoshida disclose the apparatus of claim 32 in which the means for combining includes a hash function generator for forming a

hash code from the combined data, the encryption module applying the digital signature to the hash code (Deguillaume Paragraphs 40-42).

Papagan et al. as modified by Deguillaume et al. fail to disclose applying the digital signature to the hash code. However, in an analogous art Miettinen et al. disclose applying a digital signature to a hash code (Paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the digital signature disclosed by Miettinen et al. in the combined system of Deguillaume, Penk and Yoshida. The rationale for this combination would have been to ascertain whether the data being sent had been modified (see Miettinen et al. Paragraph 9).

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deguillaume, Penk, Yoshida and Miettinen as applied to claim 5 above, and further in view of Everett, US Patent No 6,328,217.

**As to claim 10** the combined system of Deguillaume, Penk, Yoshida and Miettinen fail to disclose the method of claim 5 in which the step of applying a digital signature to the hash code further includes applying digital signatures of the originator of the media data stream and a certification authority.

However, in an analogous art, Everett et al. disclose applying digital signatures of the originator of the media data stream and a certification authority (col. 6 lines 19-33). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the signatures method disclosed by Everett et al. in the system of Deguillaume,

Penk, Yoshida and Miettinen. The rationale for this combination would have been to assure the identity of the originator of the media data stream.

5. Claims 11-16 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al., US Patent No 6,963,972 in view of Deguillaume, in view of Yoshida, and further in view of Miettinen.

**As to claim 11** Chang et al. disclose a method of transcoding a media data stream for distribution from a transcoder device, the method comprising:  
receiving a data stream of media content from a media content data source (col. 7 lines 39-58; Fig. 8); transcoding the media content of the data stream into a new format (col. 7 lines 39-58).

Chang et al. fail to disclose that the media stream includes embedded, secured content identification data in frames of the media data stream, in which the secured content identification data incorporates data relating to a predetermined property of the media data stream and that corresponds to a tamper resistant identifier that is based upon a rapidly changing property of the media data stream; extracting data relating to a predetermined property of the media data stream in its new format; extracting content identification data from the secured content identification data; and combining the extracted data with the extracted content identification data.

However, in an analogous art, Deguillaume et al. disclose a media stream that includes embedded, secured content identification data in frames, in conjunction with each data frame for which a corresponding content

identification data relates, in which the secured content identification data incorporates data relating to a predetermined property of the media data stream and that corresponds to a tamper resistant identifier that is based upon a rapidly changing property extracted from a given data frame of the media data that is difficult to alter and is inserted into the media data in conjunction with the corresponding given data frame by reference to the rapidly changing property from which property data was extracted (Paragraphs 33-35 and 40-42; claims 12 and 13; Figs. 1 and 2 – watermarks are embedded in frames of video. The watermarks are dependent on the information in the frame of video, and therefore are a form of content identification – see for example the extraction and verification process described in Paragraphs 45-48. Due to the nature of video, these tamper resistant identifiers are based on rapidly changing properties of the media data. The watermarks are embedded in conjunction with the video frame from which the identification data is extracted. This watermark is (i) difficult to alter and (ii) inserted in conjunction with the corresponding given data frame by referring to the rapidly changing (image) property. See Paragraphs 40-42);  
extracting data relating to a predetermined property of the media data stream (Paragraphs 40-42);  
extracting content identification data from the secured content identification data (Paragraphs 45-46 – the watermark, which contains content identification data, is decrypted and extracted); and  
combining the extracted data with the extracted content identification data (Paragraphs 40-42).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the encryption method disclosed by Deguillaume et al. in the transcoder disclosed by Chant et al. The rationale for this combination would have been to create a more secure hash code that contains local contextual dependencies, thus making it more difficult to forge (Deguillaume Paragraph 40-42). All of the functions disclosed by Deguillaume et al. could have been easily applied to the data stream after it was transcoded.

The combined system of Chang and Deguillaume fails to disclose that identification data is inserted at regular intervals within the media data stream; the rapidly changing property of the media data stream includes a property which changes with each frame of the media data stream; the content identification data further including a continuity count within the identifier, wherein the continuity count comprises a data field that increments in a predictable manner each time the identifier is inserted into the media data stream to enable a detection of unauthorized editing by detecting any discontinuity in an embedded continuity count.

However, in an analogous art, Yoshida discloses content identification inserted at regular intervals within the media data stream (Abs – watermarks are inserted at each frame);

that the rapidly changing property of the media data stream used to calculate a watermark includes a property which changes with each frame of the media data stream (Abs – watermarks are based on frame number, which changes with each frame); and

content identification data inserted into frames of a media data stream that comprises a continuity count, wherein the continuity count comprises a data field that increments in a predictable manner each time the identifier is inserted into the media data stream to enable a detection of unauthorized editing by detecting any discontinuity in an embedded continuity count (Abs – the watermark comprises frame number, or a continuity count, which increments with each frame. Watermarks are inserted at each frame, so the count is incremented each time the identifier is inserted into the stream).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system of Chang and Deguillaume with the teachings of Yoshida. The rationale for this modification would have been to provide further protection of copyright of contents against interception by providing an even more secure watermarking scheme.

The combined system of Chang, Deguillaume and Yoshida fail to disclose applying a digital signature to the combined data.

However, in an analogous art, Miettinen et al. disclose applying a digital signature to a hash code (Paragraph 9). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the digital signature disclosed by Miettinen et al. in the combined system of Chang, Deguillaume and Yoshida. The rationale for this combination would have been to ascertain whether the data being sent had been modified (see Miettinen et al. Paragraph 9). Therefore it would have been obvious to insert the combined data (as disclosed by Deguillaume et al.) and digital

signature (as disclosed by Miettinen et al.) as re-secured content identification data into the data stream.

**As to claim 12** the combined system of Chang, Deguillaume, Yoshida and Miettinen disclose a method in which the new format of the data stream has a lower resolution or transmission/storage bandwidth than the original format of the data stream (Chang col. 1: 43-62).

**As to claim 13** the combined system of Chang, Deguillaume, Yoshida and Miettinen disclose a method in which the media content may comprise audio and video data streams (Chang col. 1:15-30).

**As to claim 14** the combined system of Chang, Deguillaume, Yoshida and Miettinen disclose the method of claim 11 in which the predetermined property is any property of the media data stream that changes from data frame to data frame (Deguillaume Paragraph 40-42).

**As to claim 15** the combined system of Chang, Deguillaume, Yoshida and Miettinen disclose the method of claim 14 in which the predetermined property comprises frame size and frame hash (Deguillaume Paragraph 40-42).

**As to claim 16** the combined system of Chang, Deguillaume, Yoshida and Miettinen disclose the method of claim 15 in which the predetermined property is a combination of frame size and frame hash (Deguillaume Paragraphs 40-42).

**As to claim 34** see similar rejection of claim 11. The method of claim 11 corresponds to the apparatus of claim 34. Therefore, claim 34 has been analyzed and rejected.

6. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang, Deguillaume, Yoshida and Miettinen as applied to claim 11 above, and further in view of Everett.

**As to claim 17** the combined system of Chang, Deguillaume, Yoshida and Miettinen fails to disclose the method of claim 11 in which the step of applying a digital signature to the combined data further includes applying a digital signature of the transcoding device.

However, in an analogous art Everett et al. disclose applying the digital signature of an intermediary device (col. 6 lines 19-22).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Chang, Deguillaume, Yoshida and Miettinen with the teachings of Everett. The rationale for this modification would have been to ensure that modifications made to the media stream were performed by known and trusted devices, of which the transcoding device is one.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang, Deguillaume, Yoshida, Miettinen and Everett as applied to claim 11 above, and further in view of Reeds et al., US Patent No 5,153,919.

**As to claim 18** the combined system of Chang, Deguillaume, Yoshida and Miettinen fail to disclose the method of claim 17 in which the step of applying a digital signature to the combined data further includes the step of making available a

corresponding public key of the transcoding device that is digitally signed by the originator of the content identification data.

However, in an analogous art, Reeds et al. disclose making available the public key of a device that is digitally signed by the originator of the content identification data to prove to third parties that the device is authorized by the content provider (col. 2 lines 17-27).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the public key as disclosed by Reeds et al. in the transcoder of Chang et al. as modified. The rationale for this combination would have been to assure third parties that the transcoder is authorized by the content provider.

8. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang, Deguillaume, Yoshida and Miettinen as applied to claim 11 above, and further in view of McCormack et al., US Pub No 2004/0143836.

**As to claim 19** the combined system of Chang, Deguillaume, Yoshida and Miettinen fail to disclose the method of claim 11 in which the step of combining the extracted data with the extracted content identification data further includes the step of modifying the extracted content identification data.

However, in an analogous art, McCormack et al. disclose updating meta data (i.e. content identification data) after transcoding (Paragraph 76).

It would have been obvious to one of ordinary skill in the art at the time of the invention to update the content identification data as disclosed by McCormack et al. in

the transcoder of the combined system of Chang, Deguillaume, Yoshida and Miettinen. The rationale for this combination would have been to pass on updated meta data that reflects the changes made by the transcoder. All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

**As to claim 20** the combined system of Chang, Deguillaume, Yoshida, Miettinen and McCormack disclose the method of claim 19 in which the step of modifying the extracted content identification data comprises including an indication of the new format of the transcoded data stream (McCormack Paragraph 76).

**As to claim 21** the combined system of Chang, Deguillaume, Yoshida and Miettinen disclose the method of claim 19 in which the step of modifying the extracted content identification data comprises including an identity of a device performing the transcoding (McCormack Paragraph 76 - transcoding device is identified in the updated meta data).

9. Claims rejected under 35 U.S.C. 103(a) as being unpatentable over Deguillaume and Yoshida.

**As to claim 22** Deguillaume et al. disclose a method of verifying the integrity of secured content identification data embedded in a media data stream with a receiver device, comprising the steps of:

receiving a data stream of media content by the receiver device (content can be video - see claims 12-13) the data stream of media content including embedded, secured content identification data in frames of the media data stream, in conjunction with each data frame for which a corresponding content identification data relates, in which the secured content identification data incorporates data relating to a predetermined property of the media data stream and that corresponds to a tamper resistant identifier that is based upon a rapidly changing property extracted from a given data frame of the media data stream that is difficult to alter and is inserted into the media data stream in conjunction with the corresponding given data frame by reference to the rapidly changing property from which property data was extracted (Paragraphs 33-35 and 40-42; claims 12 and 13; Figs. 1 and 2 – watermarks are embedded in frames of video. The watermarks are dependent on the information in the frame of video, and therefore are a form of content identification – see for example the extraction and verification process described in Paragraphs 45-48. Due to the nature of video, these tamper resistant identifiers are based on rapidly changing properties of the media data. The watermarks are embedded in conjunction with the video frame from which the identification data is extracted. This watermark is (i) difficult to alter and (ii) inserted in conjunction with the corresponding given data frame by referring to the rapidly changing (image) property. See Paragraphs 40-42);

extracting first data relating to a predetermined property of the media data stream (Paragraphs 45-48 - a signature is recalculated from the received data);

extracting content identification data from the secured content identification data (Paragraphs 45-48 – content identification data is contained within the extracted watermark. See paragraphs 40-42);

extracting second data relating to the predetermined property from the secured content identification data (Paragraphs 45-48 - the encrypted, embedded signature is extracted); and

comparing the first data and the second data to verify the authenticity of the extracted content identification data (Paragraph 46 – the computed signature is compared with the extracted signature, and  $A_T$  is the result of the comparison)

Deguillaume fails to disclose the content identification is inserted at regular intervals within the media data stream; that the rapidly changing property of the media data stream includes a property which changes with each frame of the media data stream; and the content identification data further comprising a continuity count within the identifier, wherein the continuity count comprises a data field that increments in a predictable manner each time the identifier is inserted into the media data stream to enable a detection of unauthorized editing by detecting any discontinuity in an embedded continuity count.

However, in an analogous art, Yoshida discloses content identification inserted at regular intervals within the media data stream (Abs – watermarks are inserted at each frame);

that the rapidly changing property of the media data stream used to calculate a watermark includes a property which changes with each frame of the media data stream (Abs – watermarks are based on frame number, which changes with each frame); and content identification data inserted into frames of a media data stream that comprises a continuity count, wherein the continuity count comprises a data field that increments in a predictable manner each time the identifier is inserted into the media data stream to enable a detection of unauthorized editing by detecting any discontinuity in an embedded continuity count (Abs – the watermark comprises frame number, or a continuity count, which increments with each frame. Watermarks are inserted at each frame, so the count is incremented each time the identifier is inserted into the stream).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system of Deguillaume and Penk with the teachings of Yoshida. The rationale for this modification would have been to provide further protection of copyright of contents against interception by providing an even more secure watermarking scheme.

**As to claim 27** the combined system of Deguillaume and Yoshida discloses the method of claim 22 in which the media content data stream comprises pictures, audio, video data streams (Deguillaume Paragraph 33, Claims 12-13).

**As to claim 28** the combined system of Deguillaume and Yoshida disclose the method of claim 22 in which the predetermined property is any property of the media data stream that changes from data frame to data frame (Deguillaume Paragraphs 40-42).

**As to claim 29** the combined system of Deguillaume and Yoshida disclose the method of claim 28 in which the predetermined property comprises frame size and frame hash (Deguillaume Paragraphs 40-42).

**As to claim 30** the combined system of Deguillaume and Yoshida disclose the method of claim 29 in which the predetermined property is a combination of frame size and frame hash (Deguillaume Paragraphs 40-42).

**As to claim 35** see similar rejection of claim 22. The method of claim 22 corresponds to the apparatus of claim 35. Therefore, claim 35 has been analyzed and rejected.

10. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deguillaume and Yoshida, as applied to claim 22 above, and further in view of Miettinen et al., US Pub No 2002/0138729.

**As to claim 23** the combined system of Deguillaume and Yoshida fail to disclose the method of claim 22 in which the step of extracting content identification data from the secured content identification data comprises the steps of: obtaining a public key of a content provider that secured the content identification data; and verifying an encrypted signature of the content provider using the public key.

However, in an analogous art, Miettinen et al. disclose a method in which the step of extracting content identification data from the secured content identification data comprises the steps of: obtaining a public key of a content provider that secured the

content identification data; and verifying an encrypted signature of the content provider using the public key (Paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the public key disclosed by Miettinen et al. in the combined system of Deguillaume and Yoshida. The rationale for this combination would have been to verify that the received data is unchanged and that it has been sent by the content provider.

11. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deguillaume, Yoshida and Miettinen as applied to claim 23 above, and further in view of Everett et al., US Patent No 6,328,217.

**As to claim 24** the combined system of Deguillaume, Yoshida and Miettinen fail to disclose the method of claim 23 in which the step of extracting content identification data from the secured content identification data comprises the steps of: obtaining a public key of a certification authority; verifying the authenticity of the public key of the content provider using the public key of the certification authority.

However, in an analogous art, Everett et al. disclose obtaining a public key of a certification authority; verifying the authenticity of the public key of the content provider using the public key of the certification authority (col. 6 lines 19-33).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the public key of a certification authority as disclosed by Everett et al. in the combined system of Deguillaume, Yoshida and Miettinen. The rationale for this combination would have been to verify that the source of the data is trustworthy.

12. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deguillaume and Yoshida as applied to claim 22 above, and further in view of Chang et al., US Patent No 6,963,972 and further in view of Reeds et al., US Patent No 5,153,919.

**As to claim 25** the combined system of Deguillaume and Yoshida fail to disclose the method of claim 22 in which the media data stream is received via a transcoding device, and in which the step of extracting content identification data from the secured content identification data comprises the steps of verifying that the transcoder device was authorised to modify the data stream by an originator of the content identification data.

However, in an analogous art, Chang et al. disclose that the media data stream is received via a transcoding proxy device (col. 7 lines 39-58, Fig. 8)

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a transcoding device as disclosed by Chang et al. in the encryption scheme disclosed by Deguillaume and Yoshida. The rationale for this combination would have been to change the format of data when necessary.

The combined system of Deguillaume, Yoshida and Chang fails to disclose verifying that the transcoder device was authorised to modify the data stream by an originator of the content identification data.

However, in an analogous art, Reeds et al. disclose making available the public key of a device that is digitally signed by the originator of the content identification data

to prove to third parties that the device is authorized by the content provider (col. 2 lines 17-27).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the digital signature disclosed by Reeds et al. in the transcoder of the combined system of Deguillaume, Yoshida and Chang. The rationale for this combination would have been to assure that the transcoder is trustworthy.

13. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deguillaume, Yoshida, Chang and Reeds, as applied to claim 25 above, and further in view of Miettinen et al., US Pub No 2002/0138729.

**As to claim 26** the combined system of Deguillaume, Yoshida, Chang and Reeds disclose obtaining a public key of the transcoding device that secured the content identification data, the public key being digitally signed by the originator of the content identification data (col. 2 lines 17-28).

The combined system of Deguillaume, Yoshida, Chang and Reeds fail to disclose the method of claim 25 in which the step of extracting content identification data from the secured content identification data comprises the steps of: obtaining a public key of the originator; verifying an encrypted signature of the originator using the public key of the originator, and thereby verifying the public key of the transcoder device; verifying the content identification information using the verified public key of the transcoder device.

However, in an analogous art, Miettinen et al. disclose obtaining a public key of an originator; verifying an encrypted signature of the originator using the public key of the originator; verifying the content identification information using the verified public key of a transmitting device (Paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the digital signature disclosed by Miettinen et al. and thereby verify the public key of the transcoder device of the combined system of Deguillaume, Yoshida, Chang and Reeds. The rationale for this combination would have been to ascertain whether the data being sent had been modified (see Miettinen et al. Paragraph 9).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HANCE whose telephone number is (571)270-5319. The examiner can normally be reached on M-F 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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